

- I. GENERAL
- THIS PROJECT IS LOCATED AT THE INTERSECTION OF MD 235 AND CORPORATE DR. IN SAINT MARY'S COUNTY, MARYLAND AND INVOLVES ROADWAY IMPROVEMENTS, THE CONSTRUCTION OF A NEW SIGNAL THAT IS EFFECTED BY THESE IMPROVEMENTS. MD 235 IS ASSUMED TO RUN IN A NORTH/SOUTH DIRECTION.
- II. INTERSECTION OPERATION
- THE PROPOSED TRAFFIC SIGNAL WILL OPERATE IN A NEMA SIX (6) PHASE, FULLY TRAFFIC ACTUATED MODE. THE MD 235 APPROACHES WILL OPERATE CONCURRENTLY, WITH AN EXCLUSIVE LEFT TURN PHASE FOR NORTHBOUND TRAFFIC. NORTHBOUND THROUGH TRAFFIC WILL NOT HAVE SIGNAL FACES AND WILL ALWAYS HAVE THE RIGHT OF WAY, THE CORPORATE DR. APPROACH WILL OPERATE SEPERATE.
- A NEW EIGHT PHASE FULLY TRAFFIC ACTUATED CONTROLLER WITH TWO (2) FOUR CHANNEL RACK MOUNTED LOOP DETECTOR AMPLIFIERS, TELEMETRY MODULE, AND INTERSECTION MONITOR WITH BATTERY BACK UP HOUSED IN A NEMA SIZE SIX (6) BASE MOUNTED CABINET.
- III. SPECIAL NOTES
1. THE SIGNAL SHOP WILL BE NOTIFIED TO PERFORM INTERNAL WIRING OF THE CABINET AT MD 235 AND CORPORATE DR. ALL CABLE SHALL BE IDENTIFIED AND BROUGHT INTO THE CONTROLLER BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY MR. EDWARD RODENHIZER, SHA SIGNAL SHOP AT (410) 787-7650 SEVENTY-TWO (72) HOURS IN ADVANCE OF THIS WORK.
2. MOT PLATES FOR THIS PROJECT WILL BE AS FOLLOWS: 104.00 TO 104.00-12, 104.02-01, 104.03-01

CONSTRUCTION DETAILS

- (A) INSTALL 12 IN. X 27 FT. STEEL POLE WITH 50 FOOT MAST ARM, SIGNAL HEADS, SIGNS, ONE WAY PEDESTRIAN SIGNAL HEADS, OPTICOM DETECTOR EYE AND 15 FOOT LIGHTING ARM 250 WATT H.P.S. LUMINAIRE (NOTE: ONE 4 INCH AND ONE 3 IN. SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND, 4 - 2 1/4 IN. X 96 IN. ANCHOR BOLTS)
- (B) INSTALL 12 IN. X 27 FT. STEEL POLE WITH 38 FOOT MAST ARM, SIGNAL HEADS, SIGNS, VIDEO CAMERA (CUT AND CAPPED TO 30 FOOT) (NOTE: ONE 3 IN. SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND, 4 - 2 1/4 IN. X 96 IN. ANCHOR BOLTS)
- (C) INSTALL 12 IN. X 27 FT. STEEL POLE WITH 38 FOOT MAST ARM, SIGNAL HEADS, SIGNS, ONE-WAY PEDESTRIAN SIGNAL HEADS (CUT AND CAPPED TO 30 FOOT) (NOTE: 1 - 3 INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND, 4 - 2 1/4 IN. X 96 IN. ANCHOR BOLTS)
- (D) INSTALL NEMA SIZE 6 BASE MOUNTED CABINET AND CONTROLLER
- (E) INSTALL 6 FT. X 30 FT. QUADROUPLE LOOP DETECTOR ENCASED IN 1/4 IN. FLEXIBLE TUBING (3-6-3 TURNS)
- (F) INSTALL ELECTRICAL HANDHOLE
- (G) INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE
- (H) INSTALL 2 IN. SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT- TRENCHED
- (J) INSTALL 2 IN. SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT- BORED
- (K) INSTALL 3 IN. SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT- TRENCHED
- (L) INSTALL 24 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (STOP LINE)
- (M) INSTALL 4 IN. SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT- BORED
- (N) INSTALL 4 IN. SCHEDULE 80 POLYVINYL CHLORIDE CONDUIT- TRENCHED
- (O) INSTALL 12 IN. WHITE PERMANENT PREFORMED PAVEMENT MARKING TAPE (CROSSWALK)
- (P) INSTALL GROUND MOUNT SIGN
- (Q) INSTALL MICRO LOOP PROBES 500 FT. LEAD-IN
- (R) INSTALL 1 IN. ELECTRICAL CONDUIT GALVANIZED SLEEVE.

EQUIPMENT LIST

A. EQUIPMENT TO BE SUPPLIED BY SHA AND INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
900000	1 EA	FURNISH NEMA 6 BASE MOUNTED CABINET & CONTROLLER
900000	2 EA	FOUR CHANNEL RACK MOUNTED LOOP DETECTOR AMPLIFIER
900000	60 SF	SHEET ALUMINUM SIGNS
-	1 EA.	D3-2 SIGN "SHANGRI-LA DR." DUEL FACED (18 IN. X 96 IN.) - MAST ARM MOUNT
-	1 EA.	R3-2MOD SIGN "NO LEFT TURN / NO U TURN" (30 IN. X 30 IN.) - MAST ARM MOUNT
-	1 EA.	R3-2MOD SIGN "NO LEFT TURN / NO U TURN" (24 IN. X 24 IN.) - GROUND MOUNT
-	1 EA.	SHIELD ASSEMBLY "NORTH, MD 235, LEFT ARROW @ 45 SOUTH, MD 235, RIGHT ARROW" (24 IN. X 78 IN.) - MAST ARM MOUNT
-	1 EA.	OMI-1(1) SIGN OBJECT MARKER (18 IN. X 18 IN.) - GROUND MOUNT
-	1 EA.	R4-7 SIGN "KEEP RIGHT" (24 IN. X 30 IN.) - GROUND MOUNT
-	1 EA.	R4-7aL SIGN "KEEP LEFT" (24 IN. X 30 IN.) - GROUND MOUNT
-	2 EA.	R5-1 SIGN "DO NOT ENTER" (30 IN. X 30 IN.) - GROUND MOUNT

B. EQUIPMENT TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR

ITEM NO.	QUANTITY	DESCRIPTION
203030	4 CY	TEST PIT EXCAVATION
585620	165 LF	FURNISH AND INSTALL 12 IN. WHITE HEAT APPLIED PERMANENT PREFORMED PAVEMENT MARKING (CROSSWALK)
585624	100 LF	FURNISH AND INSTALL 24 IN. WHITE HEAT APPLIED PERMANENT PREFORMED PAVEMENT MARKING (STOP LINE)
801004	11.89 CY	FURNISH AND INSTALL CONCRETE SIGNAL FOUNDATION
805011	30 LF	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE
870161	75 LF	FURNISH AND INSTALL 2 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - PUSHED AND BORED
870160	300 LF	FURNISH AND INSTALL 2 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED
870163	40 LF	FURNISH AND INSTALL 3 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED
870164	150 LF	FURNISH AND INSTALL 3 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - PUSHED AND BORED
870166	30 LF	FURNISH AND INSTALL 4 IN. DIA. PVC ELECTRICAL CONDUIT SCHEDULE 80 - TRENCHED
805160	30 LF	FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECOR SLEEVE
811001	7 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
813014	28.75 LF	INSTALL GROUND MOUNT SIGN
813015	31.25 SF	INSTALL OVERHEAD SIGN
831010	1 EA	FURNISH AND INSTALL 250 WATT HIGH PRESSURE SODIUM LAMP AND LUMINAIRE WITH PHOTO CELL
802501	100 LF	FURNISH AND INSTALL STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
807205	1 EA	FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT
860272	18 EA	FURNISH AND INSTALL 12 INCH VEHICULAR TRAFFIC SIGNAL HEAD SECTION (BLACK FACED SIGNAL HEAD)
860274	3 EA	FURNISH AND INSTALL 12 INCH OPTICALLY PROGRAMMED TRAFFIC SIGNAL HEAD SECTION (BLACK FACED SIGNAL HEAD)
860278	4 EA	FURNISH AND INSTALL 12 INCH PEDESTRIAN SIGNAL HEAD SECTION (BLACK FACED)
860288	75 LF	FURNISH AND INSTALL 4 CONDUCTOR OPTICOM DETECTOR CABLE
861116	50 LF	FURNISH AND INSTALL ELECTRICAL CABLE 2 CONDUCTOR NO. 12 AWG
861104	170 LF	FURNISH AND INSTALL ELECTRICAL CABLE 2-CONDUCTOR ALUMINUM SHIELDED
861106	190 LF	FURNISH AND INSTALL ELECTRICAL CABLE 3-CONDUCTOR (NO 14 AWG)
861107	650 LF	FURNISH AND INSTALL ELECTRICAL CABLE 5-CONDUCTOR (NO 14 AWG)
862101	1300 LF	FURNISH AND INSTALL LOOP WIRE ENCASED IN FLEXIBLE TUBING (NO. 14 AWG)
862102	500 LF	FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR)
866103	1 EA	FURNISH AND INSTALL 15 FT. LIGHTING ARM ON SIGNAL STRUCTURE
800000	3 EA	FURNISH AND INSTALL MICROLOOP PROBE SET 500 FT. LEAD IN.
871202	1 EA	INSTALL CONTROLLER AND CABINET - BASE MOUNTED
860292	2 EA	CUT CLEAN GALVANIZE AND CAP TRAFFIC SIGNAL STRUCTURE
800000	2 EA	FURNISH AND INSTALL MAST ARM POLE 27' W/ 38 FT. MAST ARM
800000	1 EA	FURNISH AND INSTALL MAST ARM POLE 27' W/ 50 FT. MAST ARM
837001	4 EA	FURNISH AND INSTALL GROUND ROD - 3/4 IN. DIA. X 10 FOOT LENGTH
810010	80 LF	FURNISH AND INSTALL ELECTRICAL CABLE 1 CONDUCTOR NO 4 AWG THHN/THWN
801104	70 LF	FURNISH AND INSTALL WOOD SIGN SUPPORT 4" X 4"
805011	15 LF	FURNISH AND INSTALL 1 IN. ELECTRICAL CONDUIT - GALVANIZED SLEEVE
800000	1 EA	FURNISH AND INSTALL 3M OPTICOM # 721 DETECTOR EYE
800000	1 EA	FURNISH AND INSTALL VIDEO CAMERA PROCESSOR IN NEW CONTROLLER
800000	1 EA	FURNISH AND INSTALL VIDEO TRANSMISSION UNIT
800000	1 EA	FURNISH AND INSTALL VIDEO CAMERA FOR DETECTION

THE FOLLOWING CONTACT PERSONS FOR DISTRICT # 5 ARE AS FOLLOWS:

Mr. Richard L. Daff Sr.
Chief, Traffic Operations Division
(410) 787-7630

Mr. Larry Elliot
Asst. District Engineer - Traffic
(410) 841-5450

Mr. John Mays
Acting Engineer - Utility
(410) 841-5450

Mr. Paul Armstrong
District Engineer
(410) 841-5450

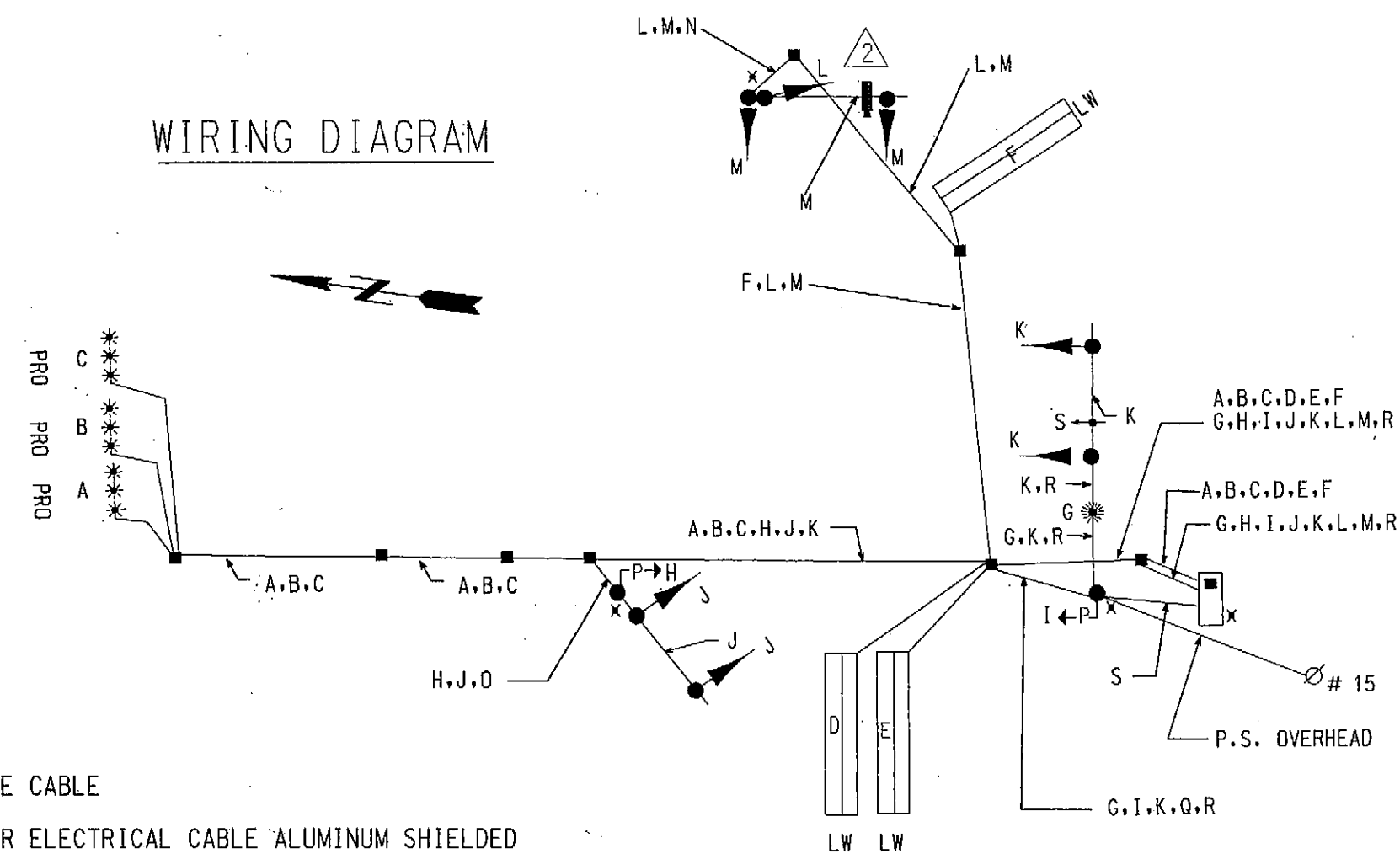
Mr. Charles Georges
Asst. District Engineer - Maintenance
(410) 841-5450

The Power Company Representative is:

SOUTHERN MARYLAND ELECTRIC COMPANY

P.O. BOX 12B
LEONARDTOWN MARYLAND 20650
(301) 475-5631

WIRING DIAGRAM



WIRING KEY

A,B,C	MICRO PROBE CABLE
D,E,F	2 CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED
G	2 CONDUCTOR ELECTRICAL CABLE (NO. 12 AWG TYPE T.C.)
H,I	3 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
J,K,L,M	5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)
N,O,Q	STRANDED BARE COPPER GROUND WIRE (NO. 6 AWG)
R	4 CONDUCTOR OPTICOM DETECTOR CABLE (NO. 20 AWG)
S	1 CONDUCTOR ELECTRICAL CABLE (NO. 4 AWG)
PRO	MICRO LOOP PROBES
LW	LOOP WIRE
X	GROUND ROD
PS	POWER SOURCE

PHASE CHART

	1	2	3	4	5	6	7	8	9
PHASE 2 & 5	R	R	+G-	G	G	R	R	DW	DW
PHASE 2 & 5 CHANGE	R	R	+Y-	Y	Y	R	R	DW	DW
PHASE 2 & 6	G	G	R	R	R	R	R	W	W
PED CLEAR	G	G	R	R	R	R	R	FL/DW	FL/DW
PHASE 2 & 6 CHANGE	Y	Y	R	R	R	R	R	DW	DW
PHASE 4	R	R	R	R	R	G	G	DW	DW
PHASE 4 CHANGE	R	R	R	R	R	Y	Y	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

ADDENDUM NO.2 01/04/2001

REVISIONS	APPROVALS	MARYLAND DOT - STATE HIGHWAY ADMINISTRATION Office of Traffic & Safety TRAFFIC ENGINEERING DESIGN DIVISION	
	TEAM LEADER, TRAFFIC ENGINEERING DESIGN DIVISION	MD 235 AND CORPORATE DRIVE	
	ASST. CHIEF TRAFFIC ENGINEERING DESIGN DIVISION		
	CHIEF, TRAFFIC ENGINEERING DESIGN DIVISION		
	DIRECTOR, TRAFFIC & SAFETY		
DRAWN BY: R. LLEWELLYN CHECKED BY: C. MUNZ SCALE: 1" = 20' DATE: 04/2000		F.A.P. NO. SM7685370 S.H.A. NO. 18023512J5 COUNTY: SAINT MARY'S LOG MILE: 18023512J5	
		TS NO. 3848 SHEET NO. 98 OF 154	